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The Dimensions of Critical Thinking and it's Relation to Improving the Quality of Life among Female Students at the College of Education, Jouf University

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Abstract: The current study aimed to identify the relationship between the dimensions of critical thinking and quality of life in the light of some variables (academic level, specialization). The study sample consisted of (188) female students at the College of Education, Jouf University, majoring in early childhood and Islamic studies for the academic year 1443 AH / 2021 AD. The descriptive approach, critical thinking scale and quality of life scale have been used to achieve the objectives of the study. The results revealed an average level of critical thinking and quality of life among female students at the College of Education, where the percentages were (68.23%), (71.23%), respectively. There were no statistically significant differences between female students of different academic levels (from the second to the eighth level) on all dimensions of the critical thinking scale and its total score. While there were statistically significant differences between female students majoring in early childhood and Islamic studies in dimensions (interpretation, evaluation of arguments, deduction) and the total score of the critical thinking scale in the direction of early childhood students. However, no statistically significant differences were detected in the other two dimensions (recognition of assumptions, inference). Also, there were no statistically significant differences between students of different academic levels on the dimensions of the quality-of-life scale. There was a statistically significant positive relationship between the dimensions of the critical thinking scale and all dimensions of the quality-of-life scale and its total score. The study recommends conducting more scientific and psychological studies that shed light on the dimensions of critical thinking and the quality of life for university students in line with the Kingdom of Saudi Arabia's vision of 2030.

Keywords: Critical thinking, Quality of life, University students.

1 Introduction

Youth are the center of development and the backbone of any advancement or development in society. As our youth face many psychological, economic, and social challenges, sound thinking is a key tool for effective and constructive change in society. University students are an indivisible part of society and are not isolated from it and therefore affected by all changes, especially regarding the requirements of their university life. So, the acquisition of critical thinking skills is important to minimize these negative impacts, including understanding, explaining, analyzing and evaluating the life issues surrounding them and achieving their desired life goals.

Our current era is witnessing a massive information revolution in all fields, and thinking of all kinds, especially critical thinking, which has become the dominant language in this era, is one of the most important tools that people use to help them adapt and meet the requirements of life [1]. The progress of nations depends on the extent of what its people offer in terms of creativity and production, and what they make of giving and what they possess of values. Advanced societies did not achieve progress thanks to their natural resources, but thanks to the exploitation of what they have of thinkers, critics, excelling, and creators [2].

Where [3] emphasized that critical thinking skills are among the future skills that must be enhanced among students, especially among university youth, as this qualifies them to practice their social roles after graduating from the university, represented in their professional, family, and social lives. Moreover, graduate students who do not have critical thinking skills will find it difficult to compete in the work environment and in the midst of society [4], [5]. No wonder most educators consider this skill to be the desired goal in the school learning process. Their empowerment is not only limited to the primary and secondary education level, but is also important at the university education level [6], [7].

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Qatami [8] confirms that critical thinking skills appear clearly in the university education stage, where the student is more self-reliant during the learning process, and that the more the student understands the information he acquires in the university education stage, the greater his ability to draw and analyze results and achieve self-confidence and solve problems.

With the increase in interest in critical thinking and its skills, which comes in line with the changes of the times, especially in the university education stage, psychology has witnessed lately an interest in topics that emphasize the positivity of the human personality and the importance of the individual achieving harmony between the internal and external life. Among the most important of these issues is the quality of life, which is one of the main goals that the Kingdom of Saudi Arabia seeks to achieve within its (2030) Vision [9] by supporting and developing new options to improve the quality of life of individuals, as the Kingdom launched the Quality of Life Program in (2018) to improve the quality of life and promote positive lifestyles and increase citizen interaction with society, which every individual seeks in life, for it makes him better able to deal efficiently with the most extreme conditions of life surrounding him [10]. Therefore, the quality of life is associated with the desire for life, creativity and a sense of self-efficacy, and presenting the best of the individual's achievements [11].

The quality of life is considered the gateway to the interest in human development, which coincides with the integrated growth of the individual from all psychological, mental, social, physical and religious aspects [12] and also one of the factors that affect the life of the university student as it helps him to provide everything he needs in the various aspects of life. As it means the values of the environment in which a person lives, his awareness and perception of his situation, the relationship of that to his expectations and goals, and the extent of coexistence with himself and his society in a positive way that gives him the ability to fully perform his role in life [10].

Bu Amama [13] indicated that the importance of knowing the level of quality of life for university students lies in improving and providing everything they need in order to provide the best performance, and to develop their scientific and cognitive abilities, as they are ready to enter professional life and building their future lives. Therefore, trying to understand them to appreciate the quality of life, and their awareness of it, is an important step to understand this stage and its requirements.

The researcher believes that the quality of our work and our life depends strictly on the quality of our thinking. Thus, the importance of acquiring critical thinking skills, especially in the university education stage, is considered one of the life skills that the student needs as make it easier for him to understand aspects of life and interact with it, this also achieves psychological and social compatibility for the individual in his personal and professional life. This reflects positively on the student's life and improves the quality of his life in various fields.

Hence, the interest in the subject and objectives of this study is evident by providing a theoretical framework on critical thinking and its relationship to the quality of life of a sample of university students, as knowing their intellectual patterns and methods leads to knowing generations, which is considered a basis and building for the future of their society and a basic goal that the individual seeks to achieve quality of life in all domains.

2 Study problem and questions

Critical thinking is one of the most important life skills that our young people need today in the current technological revolution in all fields and their qualification for post-university life that makes them more open to others and self-confident and better able to solve their problems and make decisions. Critical thinking plays a key role in a university student's life in dealing with academic problems and difficulties. Improving the student's university life is one of the goals of social and economic development pursued by many countries. Perhaps one of the first is Saudi Arabia, which seeks to achieve the highest rates of development and prosperity. Hence, attention to the problem of the study is reflected in the fact that knowing the level and dimensions of critical thinking among female university students leads in turn to identifying and focusing on ways to improve their quality of life within colleges and universities.

From the foregoing, the researcher find that the problem of the study is determined in the following main question:

What are the dimensions of critical thinking and its relationship to improving the quality of life for female students at the College of Education, Jouf University?

The following sub-questions branch out from this question:

1. What is the level of critical thinking and quality of life for female students at the College of Education?
2. Are there statistically significant differences in the level of critical thinking dimensions among female students due to the variable (academic level - specialization)?
3. Are there statistically significant differences in the level of quality of life among female students due to the variables

4. Is there a correlation between each of the dimensions of critical thinking and quality of life for female students at the College of Education?

3 Objectives of the study

The current study aims to identify:

1. The level of both critical thinking and quality of life for female students at the College of Education?
2. Differences in the level of critical thinking dimensions among female students according to the variable (academic level - specialization)?
3. Differences in the level of quality of life among female students according to the variable (academic level - specialization)?
4. The correlation between each of the dimensions of critical thinking and quality of life among female students at the College of Education?

4 The importance of the study

The importance of the current study stems from two aspects: the theoretical side, and the applied side:

Theoretical importance:

- Identifying the level of critical thinking and quality of life among female students, as it is one of the most important priorities in university education, which coincides with the Kingdom's vision (2030).
- Focus on an important segment of society (university students), which plays a significant role in the social and economic development of society.
- Determine the factors that affect students' thinking and quality of life, and ways to overcome them.

Applied importance:

- The need to provide appropriate opportunities to train university students on critical thinking skills, as well as time management and the use of leisure time to achieve quality of life.
- Introducing the concept of quality of life in some university standards.

5 Terminological and procedural definitions

Critical thinking:

Both [14] and [15] indicated that critical thinking is a way for the individual to express his participation in life through organized evaluation, conducting discussions, and giving evidence that support his idea.

The researcher defines it as the individual's ability to think in an organized way so that he can show the advantages and disadvantages of something and find evidence of them so that the individual can solve problems and make the right decision.

The researcher defines it procedurally by the degree obtained by the student on the critical thinking scale for each of the dimensions covered by the scale (recognition of assumptions, interpretation, evaluation of arguments, deduction, and inference).

Quality of life:

The quality of life is referred to as the individual's sense of contentment and happiness, and his ability to satisfy his needs through the richness of the environment, and the sophistication of the services provided to him in the health, educational, psychological and social fields with good management of time, and benefit from it [10], [16].

The researcher defines it as a state of feeling satisfied with life and a sense of happiness, through the individual achieving compatibility with himself and others around him and achieving a balance between the psychological, health, social, economic, environmental and educational aspects. This reflects on the individual's personal and social life in a positive way, achieving a sense of competence and thinking in a sound way that enables him to solve problems and make decisions. The researcher defines it procedurally by the degree obtained by the student on the quality of life scale for each of the dimensions covered by the scale (quality of public health, quality of family and social life, quality of

education and study, quality of emotions (emotional aspect), quality of mental health, as well as quality of time occupancy and management).

The limitations of the study:

Human Limits: The study was conducted on (188) female students at the College of Education from the Departments of Early Childhood and Islamic Studies.

Temporal limits: The study was conducted in the second semester 1443 AH / 2021 AD.

Spatial limits: The study was conducted at the College of Education, Jouf University.

6 Theoretical framework and previous studies

First: critical thinking

The concept of critical thinking:

Critical thinking is one of the basic skills to improve an individual's performance at work and to make life more satisfying and increase its quality, as it consists of several types of skills that contribute to solving problems in a more effective way.

Thinking is the tool of the mind, its method, and the basic foundation for bringing about any effective change in our lives. When the learner acquires thinking skills, he thus possesses the ability to analyze and use information and data in a scientific and logical manner, and to face the challenges of the present and the possibilities of the future with rationality and flexibility [2].

Denise [17] defines critical thinking as purposeful, self-regulated judgment, and that process includes proofs, perceptions, standards, and methods.

Also, [18] defines it as a complex concept that has connections with an unlimited number of complex behaviors that overlap with other concepts such as problem solving.

Furthermore, [2], [19] emphasized that critical thinking falls under the concept of higher-order thinking. Which requires the use of advanced thinking skills and that it is considered as an evaluation of what is good and bad to be interested in giving reasons, as critical thinking is concerned that individuals become more aware of taking action to change for a better life.

In addition, [20], [21], [22] indicate that individuals who have the ability to think critically are able to solve problems, succeed in the future, and contribute to the development of society.

Wooll [23] indicated that critical thinking is the ability to analyze facts and form judgment, and anyone with critical thinking skills can think clearly and rationally when the situation requires it in order to allow him to perform problem-solving and decision-making more effectively.

Also, [24] defined it as reasonable reflective thinking that focuses on decision-making and relies on analysis and selection of the information the individual has so that he can arrive at the truth by distinguishing between sound thoughts and wrong thoughts.

Through the previous definitions, it can be concluded that critical thinking is one of the higher skills that is based on reasonable thinking that is concerned with studying and evaluating things in both its positive and negative sides, interested in the reasons so that the individual can ultimately judge in an objective and logical way to reach a solution to problems.

Critical thinking skills:

There are many theoretical trends in the study and narration of critical thinking skills in references and specialized research studies, such as [7], [19], [22], [25], [26], [27], most of which agreed with [28] classification of critical thinking skills as follows:

- **Recognition of assumptions:** It is represented in the ability to examine the facts and data contained in a subject, and to distinguish between the degree of veracity of specific information, and to distinguish between truth and opinion, and the purpose of the information given.
- **Interpretation:** It is the individual's ability to identify the problem, and to identify logically acceptable explanations.
- **Evaluation of arguments:** It means the individual's ability to evaluate an idea, accept or reject it, distinguish between primary and secondary sources, and pass judgment on the adequacy of information.

- Deduction: refers to the individual's ability to draw conclusions based on premises or previous information.
- Inference: the ability to distinguish between degrees of probability of truth or error of a result according to the degree of its relevance to certain facts given to him.

The importance of critical thinking:

Educators [2], [24], [29], [30] agreed on the importance of critical thinking for the following reasons:

- Through critical thinking, students can acquire correct and acceptable explanations for many issues raised in daily life and the ability to reduce erroneous explanations.
- Critical thinking leads students to monitor and control their thinking, thus helping them to make their ideas more correct and accurate, which helps them to solve problems and make decisions in their daily lives.
- Justice and accuracy when issuing objective judgments on the opinions and beliefs of others.
- It is considered one of the effective and basic ingredients, especially in an era marked by the technological revolution and social media, so students can judge the credibility of information and access its real sources.
- Critical thinking has become one of the modern educational trends that we seek to apply in our current curricula.
- Critical thinking makes the educational process a more active and interactive event, not just an acquisition of knowledge.
- Helps the learner to accept criticism and benefit from the comments of others.
- Contributes to building an objective and active personality in society.
- Critical thinking leads individuals to deal with the huge amount of information and data that they are exposed to with ease.
- It develops among individuals the spirit of questioning and research, and not accepting facts without investigation and scrutiny.
- Develops the ability of individuals to self-learning.

Characteristics of a critical thinker:

Ziegler [31] indicated that among the most prominent features of a good critical thinker are:

- Asks vital questions and problems and formulates them clearly and accurately.
- Collects and evaluates relevant information.
- Comes to logical conclusions and solutions.
- Thinks openly about alternative systems of thought, recognizing and evaluating, as needed, their assumptions, implications, and practical consequences.
- Communicate effectively with others in finding solutions to complex problems.

As well as [18], [24] added that the critical thinker is characterized by the following:

- Do not argue about something when he does not know anything about it.
- Knows the difference between (may be true) and a result (must be true).
- Tries to avoid common mistakes in reasoning.
- He wonders about anything that seems unreasonable or incomprehensible to him.
- Takes a position or abandons it when there is insufficient evidence and reasons.
- Looks for reasons and alternatives and takes all aspects of the situation with equal importance.

Second: quality of life:

The term quality of life appeared in the field of positive psychology, as it is concerned with studying the positive characteristics and aspects of strength in humans, with the aim of helping them achieve personal and social growth [32].

World Health Organization [33] defined it as the individual's awareness of his position in life in the context of the culture and values in which he lives and linking them with his own goals, expectations, beliefs and interests.

Also [34], [35] indicated that it is the personal sense of competence and proficiency in dealing with challenges.

Moreover, [36] added that the quality of life is when the individual lives in a good condition, enjoying physical, mental and emotional health at a degree of acceptance and satisfaction, and that he has strong will in the face of the pressures he faces, and is characterized by high self- and social competence, satisfied with himself and his family, professional and community life. Satisfied with his duties and ambitions, confident in himself and self-appreciated, which makes him feel happy.

As [37] indicated, they are aspects that lead to university students feeling comfortable, happy, satisfied with life, and able to satisfy their needs.

This is also supported by [38] in that the quality of life means the individual's feeling of happiness and satisfaction with life through achieving a balance between the health, psychological, social, academic, environmental and economic aspects, and the degree of compatibility with himself and with others.

Katlo and Tayseer [39] reported that the quality of life is the individual's awareness of his position in life in the context of the culture and values in which he lives, and an attempt to link them with his own goals, expectations and beliefs. Moreover, [40] defined the student's quality of life as the degree of the student's feeling of satisfaction and happiness while performing schoolwork, which is expressed by obtaining a degree of competence in learning, performing some quality work, feeling personal and social responsibility, and effective self-control in his life and environment. Satisfying his psychological needs in effective and responsible ways, and his ability to solve his problems and make decisions.

As well as [41] defined the quality of life as the extent to which an individual practices life in quantity and quality to a high degree that enables him to agree and succeed in all aspects of life.

Recently, [12] confirmed that the quality of the university student must meet the objective conditions that result in general satisfaction when evaluating it in the different areas of his life from the general health environment, family and social.

From the previous definitions, we note that the quality of life was approached by researchers from different points of view. Some of them viewed it as the individual's feeling of happiness and satisfaction with his life, success and compatibility in all aspects of life. Some of them dealt with the quality of life as the individual's ability to achieve balance in all aspects of life within the framework of the individual's beliefs and expectations, and general satisfaction with life in many areas such as health, family and social environment.

Dimensions and indicators of quality of life:

Ali [25] indicated that quality of life has two dimensions:

- Subjective quality of life and branches from it (easy life, satisfaction with life, life with meaning).
- Objective quality of life and branches from it (objective factors, satisfying needs, realizing potentials, biological aspects).

Also, [42] divided the areas of quality of life into four areas as follows:

- The field of mental health: It includes the individual's awareness of the quality of his life in terms of multiple aspects.
- The field of physical health: It includes the individual's awareness of the quality of his life in terms of specific aspects such as activity or energy, fatigue, pain, discomfort and sleep.
- Social sphere: It includes personal relationships and social support that an individual receives.
- Environmental domain: It includes freedom, personal and physical security, health care, home environment, leisure time activity, pollution, noise, weather and means of transportation.

While [33] indicated that the quality of life has four dimensions, namely:

- The physical dimension: This dimension explains how to deal with pain, discomfort, sleep and get rid of fatigue.
- Social dimension: This dimension includes personal and social relationships, social support and successful marriage.
- Psychological dimension: It includes positive feelings and feelings, focus of attention, desire to learn, think, remember, self-esteem, human interest in one's body and appearance, and facing negative emotions.
- The environmental dimension: It includes the positive exercise of freedom and the feeling of safety and security in environmental aspects, the home environment, sources of income, and distancing from pollution and noise.

As well as [43] divided the quality of life into four dimensions, namely:

- Functional dimension: It is related to the level of physical activity and health care.
- Social dimension: It relates to communication and interaction with others.
- The physical dimension: it relates to symptoms related to diseases.
- Psychological dimension: It is related to the emotional state, cognitive functions, general perception of general and psychological health, satisfaction with life and happiness.

While [36] indicated that the dimensions of quality of life are divided into six components, namely:

Quality of general life, quality of family and social life, quality of education and study, quality of emotional and mood aspects, quality of psychological life, quality of time management.

As for indicators of quality of life, they are summarized in Figure (1), as indicated by [44] as follows:

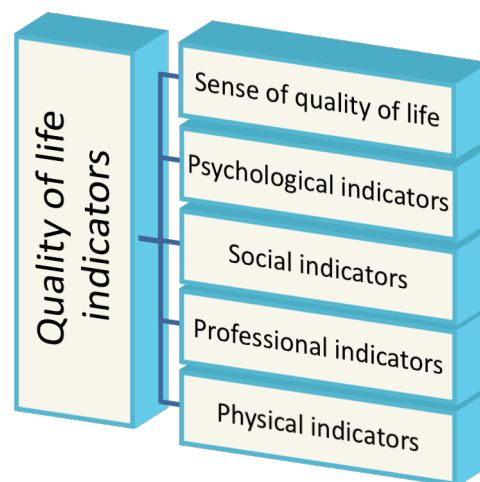


Fig. 1. Indicators of quality of life

Among the studies that dealt with critical thinking skills [25], which aimed to identify the effectiveness of training experiences included in a training program based on thinking skills and improving the quality of academic life for a sample of students from Jazan University. The study tools were applied to a sample of (131) students from the preparatory year at Jazan University. The results indicated that there were statistically significant differences between the mean scores of pre-application and post-application in thinking styles. Also, there were differences between the two applications in academic self-efficacy and the overall degree of academic life quality and academic satisfaction. Thus, it became clear how effective the proposed training program is in developing thinking methods and improving the quality of academic life.

Also, [45] dealt with the levels of positive thinking and its relationship to the quality of life among workers in civil institutions in the governorates of Gaza. In order to achieve the objectives of the study, the two tools of the study were applied: the positive thinking scale and the quality of life scale prepared by researchers. The study sample consisted of (100) individuals working in charity institutions in the governorates of Gaza. The results indicated that positive thinking obtained a score of 73%, and the field of feeling satisfaction ranked first with a score of 84.1%, while the field of positive risk ranked ninth and last with a score of 48.5%. The results also showed that the feeling of quality of life got a score of 73.6%, and the social domain ranked first with a score of 85.1%, while the functional domain got the fourth and last rank with a score of 64.8%. The results also showed that there was a statistically significant correlation between positive thinking and a sense of quality of life for them.

Also, [46] sought to study "the level of quality of life among female students of the University of M'sila". The researcher relied on the descriptive approach and used the measure of the quality of life among university students. The sample of the study consisted of 55 students from the first year level in the Department of Psychology who are enrolled in a master's degree at the University of M'sila. The results of the study revealed a high level of quality of life among female students of the Department of Psychology, and there were no differences due to the following variables (study class, age, residence style).

While [26] presented a study entitled Critical Thinking Skills: Academic Ability, Mastery, Concepts and Analytical Skills for undergraduate students. This study aimed to know the factors associated with students' critical thinking skills, and was applied to 112 undergraduate students in the Department of Biological Education, University of

Muhammadiyah. The study included four variables that were measured, which are academic ability, proficiency, concepts and analytical skills, and critical thinking skills. The results showed that all three variables, mastery of concepts, academic ability, and analytical skill had an effective impact, contributing to students' critical thinking skills by 3.84%, 32.25% and 54.26%, respectively. Students' analytical skills have the greatest contribution to their critical thinking skills. Thus, the result of this study can be a basic reference in designing a learning process capable of empowering students' critical thinking skills, such as internalizing their problem-based learning skills.

Among the studies that dealt with "the level of healthy quality of life among university students" [35] aimed to identify the level of quality of life among female students and the nature of the differences in the quality of healthy life according to the variables of gender and educational level. To achieve this, the measure of the quality of public health for female students [48] was applied to 100 male and female students who were randomly selected from the University of Shazly Ibn Jadid in El Tarf. In general, the results indicated that the level of quality of life related to general health among female students was moderate. The results also indicated that there were no statistically significant differences in the quality of healthy life among the students of Al-Shazly Bin Jadid University, according to both gender and educational level.

In addition, [3] presented a proposed training program based on the development of critical thinking skills as an input to improve the quality of life for university youth, and the employment of critical thinking skills in academic and life tasks. Which contributes to improving the quality of life of university youth. The program is applied to first-year students at the Faculty of Specific Education, Cairo University, in three departments (educational media, art education, and music education).

As well as [37] dealt with "quality of life and its relationship to positive thinking", which aimed to identify the quality of life and its relationship to positive thinking among students of Umm Al-Qura University. The study was applied to students of Umm Al-Qura University in Makkah Al-Mukarramah. The concepts of the study dealt with positive thinking and quality of life. The study showed several results, including the existence of statistically significant differences between the averages of the study sample's responses on the total degree of quality of life, according to the difference in the college, and the differences were in favor of students of scientific faculties. The study concluded with several results according to the mother's level of education, including the presence of statistically significant differences between the averages of the study sample's responses about the degree of positive risk, according to the difference in the mother's education level, the differences between students with the mother's education level (intermediate or less) and students with the mother's education level (Bachelor's degree and above). For those with a mother's level of education (Bachelor's degree or higher), where the arithmetic mean was the highest.

Likewise, [47] aimed to identify the level of quality of life of the university student in the Kingdom of Saudi Arabia, and the role of the university variable (King Saud University and Al-Faisal University), income (high, low), specialization (humanitarian, scientific) in quality of life, and the nature of the relationship between the dimensions of quality of life and each of the family income and cumulative average. The study was applied to 697 female students (375 from King Saud University, and 322 from Al-Faisal University). Where the researcher used the quality of life scale for female students [48], and the results indicated, in general, a high level of quality of life in two dimensions of quality. (Quality of family and social life, quality of education and study) and it was average in two dimensions (quality of mental health, and quality of the emotional aspect). The results also indicated that there was a statistically significant effect in the university variable, income, and in the interaction between (income and specialization) and in the interaction between university, specialization, and quality of life.

Recently, [2] dealt with the development of critical thinking skills among university youth, through the professional intervention of the method of working with groups. The study sample consisted of 16 students from the third year of the Faculty of Social Work, Assiut University, and the researcher used the semi-experimental approach. The Watson and Glaser scale of critical thinking skills were used, and the results of the study revealed the effectiveness of the professional intervention by working with groups in developing the critical thinking skills of the study sample in the broad ability of critical thinking as well as in its sub-skills.

More recently, [49] aimed to identify the quality of life among students at the College of Education in Al-Khums. The results indicated an increase in the quality of life among the students of the Faculty of Education in Al-Khums in the health and personality standard and the external standard.

Also, [12] aims to reveal the nature of the relationship between quality of life and satisfaction with the academic specialization of the university student., using the descriptive method and the use of bi-directional analysis of variance and the T-test were reached: There is no relationship between the quality of life and satisfaction with the academic specialization of the university student: There is no relationship between the quality of life and satisfaction with the academic specialization of the university student., There are no statistically significant differences between males and females in their quality of life according to their university specialties, There are statistically significant differences

between students of the Faculty of Humanities and Social Sciences and students of the Faculty of Science and Technology in satisfaction with their academic specialization.

Commenting on the theoretical framework and previous studies:

It is clear from the presentation of the theoretical framework and previous studies that the topic of the present study is consistent in terms of some variables of the study and its study of the subject of critical thinking and quality of life with [2], [3], [12], [49]. Also, the current study agreed with previous studies in terms of the sample of female students as [46] and differed with all previous studies in terms of dealing with female students and the specialization of early childhood and Islamic studies. The researcher has benefited from the theoretical framework and previous studies in reviewing many scales and selecting the most appropriate ones for the current study and drawing on some studies in the importance and problem of the study and quantitative interpretation of the results and referring to sources and references related to the study variables. The following points can be drawn for the extent of benefit from the previous presentation of the theoretical framework and previous studies:

- Most of the studies focused on the university education stage.
- Some studies attempted to investigate the level of quality of life among university students and its relationship to other variables, such as [35], [37], [47], [49].
- Some studies sought to design a program based on thinking to improve the quality of life as [3], [25].
- Some studies aimed to discover the impact of quality of life, specialization, level of education, income, pattern of residence, and age on quality of life, such as [35], [37][46], [47].

Within the limits of the researcher's knowledge, there is a scarcity of studies that focused on the relationship between the dimensions of critical thinking and quality of life.

7 Methods and procedures

Study approach:

In this study, the researcher relied on the descriptive approach to collect facts and data about the studied phenomenon to analyze and interpret it, and to find out the relationship between the dimensions of critical thinking and the quality of life.

Community and sample:

The research community consisted of (250) female students of Early Childhood Department and Islamic Studies at the College of Education, Jouf University from the academic levels (second, third, fourth, fifth, sixth, seventh, eighth) for the academic year 1443 AH, 2021 AD., and the main research sample consisted of (188) female students.

The researcher verified the extent to which the research sample was distributed moderately considering age, critical thinking scale, and quality of life scale for female students at the College of Education as shown in table (1).

Table 1: The mean, median, standard deviation, and skewness coefficient for the sample under study in age, critical thinking scale, and the quality of life scale for female students at the College of Education (n = 188)

Variables		Mean	Median	Standard deviation	Skewness coefficient
Age		21.76	21.00	3.37	0.67
Critical thinking	Recognition of assumptions	3.72	4.00	0.95	- 0.89
	Interpretation	3.47	4.00	1.01	- 1.56
	Evaluation of arguments	3.83	4.00	1.01	- 0.46
	Deduction	3.41	3.50	1.11	- 0.23
	Inference	2.62	2.00	0.80	2.33
	Total score	17.07	17.00	3.12	0.06
Quality of life	Quality of public health	34.16	34.00	4.34	0.11
	Quality of family and social life	36.28	38.00	5.38	- 0.96
	Quality of education and study	38.66	34.00	6.87	- 0.15
	Quality of emotions (emotional aspect)	34.40	34.00	5.69	0.21
	Quality of mental health	37.86	39.00	6.84	- 0.50
	Quality of time occupancy and management	32.33	32.00	5.78	0.17
	Total score	213.69	213.00	28.45	0.07

It is clear from Table (1) that the skewness coefficients of the sample under study ranged between (-1.56, 2.33), which mean that, they ranged between (-3, +3). This indicates that it is inside the normal curve, so the sample is distributed moderately.

Study tools:

First: Critical thinking scale for female students at the College of Education:

Critical thinking scale description:

The researcher relied on the Watson-Glesser scale version and modified by [50]. The version of the scale consists of 25 paragraphs, measuring five dimensions of critical thinking (Table 2):

- **recognition of assumptions:** It consists of a set of phrases, each of which follows a number of proposed assumptions. The student must specify which assumptions are included in the phrase (an incoming assumption) and which are (not an incoming assumption) by placing a mark on a scale consisting of two possible answers.
- **Interpretation:** It consists of a set of paragraphs followed by several conclusions. The student must determine in the light of the paragraph, namely, the conclusions followed or derived from the logical relationship, by gradually indicating two possible answers (consequential, non-consequential).
- **Evaluation of arguments:** It consists of a set of assumptions followed by several arguments supporting or opposing what is stated in it. The student must mark ranking consisting of two answers (strong answer or weak answer).
- **Deduction:** It consists of a set of exercises, and each exercise consists of two phrases followed by several proposed conclusions. The student must determine whether each conclusion follows the phrases (correct or incorrect conclusion), by indicating a step of two possible answers.
- **Inference:** It consists of three positions; Each situation begins with presenting a set of facts, and these facts are followed by several conclusions. The student must estimate the validity of each conclusion separately, by selecting one of five possible answers.

Table 2: Dimensions and phrases of Critical thinking scale for female students at the College of Education.

n	Dimensions	Number of phrases
1	Recognition of assumptions	5
2	Interpretation	5
3	Evaluation of arguments	5
4	Deduction	5
5	Inference	5

The reliability and validity of the critical thinking scale:

The internal consistency of the critical thinking scale:

The researcher ascertained the internal consistency of the scale using a sample of (30) female students from the study community and other than the main sample of the study. The correlation coefficients between the degree of each phrase of the scale and the total score of the scale, and the correlation coefficients were calculated between the sum of the scores of each dimension and the total score of the scale as represented in Tables (3), (4), (5), respectively.

Table 3: Correlation coefficients (R) between the score of each phrase of the Critical Thinking Scale and the total score of the dimension to which it belongs (n = 30)

Recognition of assumptions		Interpretation		Evaluation of arguments		Deduction		Inference	
Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient
1	**0.63	6	**0.84	11	**0.59	16	**0.58	21	**0.75
2	**0.66	7	**0.83	12	**0.56	17	*0.44	22	**0.78
3	**0.47	8	**0.81	13	**0.75	18	**0.78	23	**0.76
4	**0.59	9	**0.88	14	**0.65	19	**0.82	24	**0.73
5	**0.59	10	*0.42	15	**0.65	20	**0.70	25	**0.62

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

It is evident from Table (3) that the correlation coefficients of the degree of each phrase of the scale and the total degree

of the dimension to which it belongs, ranged between (0.42: 0.88), which are statistically significant, indicating the internal consistency of the axes.

Table 4: Correlation coefficients (R) between the score of each phrase of the Critical Thinking Scale and its total score (n = 30)

Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient
1	**0.51	6	**0.50	11	**0.56	16	**0.56	21	**0.62
2	**0.64	7	**0.52	12	**0.52	17	**0.47	22	**0.55
3	**0.56	8	**0.49	13	**0.57	18	**0.59	23	**0.49
4	*0.44	9	**0.57	14	**0.54	19	**0.58	24	**0.53
5	*0.46	10	**0.52	15	**0.48	20	**0.50	25	**0.55

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

Data in Table (4) indicated that correlation coefficients for the degree of each phrase on the scale and the total degrees of the scale were statistically significant. The values were varied between (0.44: 0.64), which indicates the internal consistency of the axes.

Table 5: Correlation coefficient (R) between the score of each dimension and the total score of the critical thinking scale (n = 30)

Dimension	Correlation coefficient
Recognition of assumptions	**0.88
Interpretation	**0.68
Evaluation of arguments	**0.83
Deduction	**0.84
Inference	**0.75

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

** Highly Statistically significant at $p \leq 0.01$

As shown in Table (5) The correlation coefficients between the sum of the scores of each dimension and the total scores of the scale ranged from (0.68: 0.88), which are statistically significant, indicating the internal consistency of the scale.

The stability of the critical thinking scale:

Cronbach's alpha coefficient:

To calculate the stability of the scale, the researcher used Cronbach's alpha coefficient, where the researcher applied the scale to a sample of (30) female students from the study community and other than the main sample of the study as reported in Table (6).

Table 6: Alpha coefficients for the dimensions of the critical thinking scale (n = 30)

Dimensions of critical thinking	alpha value
Recognition of assumptions	**0.63
Interpretation	**0.81
Evaluation of arguments	**0.64
Deduction	**0.65
Inference	**0.78
Total score	**0.89

** Highly Statistically significant at $p \leq 0.01$

The data presented in Table (6) showed that the alpha coefficients values for the dimensions of critical thinking scale ranged between (0.63: 0.78), which are statistically significant, which indicates that the scale has an acceptable degree of stability.

Second: the measure of the quality of life for female students at the College of Education:

Description of the quality-of-life scale:

The researcher used quality of life scale prepared by [48]. The scale consists of 60 items distributed on six dimensions as illustrated in Table (7). Ten paragraphs have been drafted for each axis (5 positive paragraphs, 5 negative ones), and

Likert five points scale (never, too little, partly, much and too much) were used. Positive items were given scores (5, 4, 3, 2, 1) and the negative given scores (1, 2, 3, 4, 5) respectively.

Table 7: Dimensions of the quality of life scale for female students at the College of Education

Scale dimensions	Item numbers
Quality of public health	1-10
Quality of family and social life	11-20
Quality of education and study	21-30
Quality of emotions (emotional aspect)	31-40
Quality of mental health	41-50
Quality of time occupancy and management	51-60

The reliability and validity of the quality-of-life scale:

The internal consistency of the quality of life scale:

The researcher ascertained the internal consistency of the quality of life scale using a sample of (30) female students from the study community and other than the main sample of the study. The correlation coefficients between the degree of each phrase of the scale and both the total degree of the dimension to which they belong as well as the total degree of the scale have been calculated. Also, the correlation coefficients were calculated between the total degrees of each dimension and the total degrees of the scale. These findings are shown in Tables (8), (9) and (10), respectively.

Table 8: Correlation coefficients between the degree of each phrase of the scale and the total score of the dimension to which it belongs (n = 30)

Quality of public health		Quality of family and social life		Quality of education and study		Quality of emotions (emotional aspect)		Quality of mental health		Quality of time occupancy and management	
Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient
1	**0.65	11	**0.62	21	**0.56	31	**0.81	41	**0.69	51	**0.59
2	**0.65	12	**0.70	22	**0.78	32	**0.66	42	**0.80	52	**0.66
3	**0.61	13	**0.67	23	**0.61	33	**0.61	43	**0.68	53	**0.57
4	**0.57	14	**0.78	24	**0.75	34	**0.79	44	**0.83	54	**0.76
5	*0.45	15	**0.70	25	**0.60	35	**0.68	45	**0.85	55	**0.65
6	**0.64	16	**0.67	26	**0.72	36	**0.85	46	**0.83	56	**0.75
7	**0.75	17	**0.72	27	**0.78	37	**0.70	47	**0.93	57	**0.69
8	**0.67	18	**0.83	28	**0.75	38	**0.79	48	**0.89	58	**0.74
9	*0.44	19	**0.61	29	**0.75	39	**0.64	49	**0.53	59	**0.63
10	**0.80	20	**0.64	30	**0.58	40	**0.70	50	**0.77	60	**0.75

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

Data in Table (8) indicated that correlation coefficients between the degree of each phrase of the scale and the total degrees of the dimension to which it belongs ranged from 0.44 to 0.93, which are statistically significant, reflecting the internal consistency of the axes.

Table 9: Correlation coefficients between the degree of each phrase of the scale and the total degrees of the scale (n = 30)

Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient	Phrase number	Correlation coefficient
1	**0.63	11	**0.61	21	**0.56	31	**0.78	41	**0.65	51	**0.61
2	**0.62	12	**0.60	22	**0.65	32	**0.69	42	**0.70	52	**0.64
3	**0.62	13	**0.56	23	**0.67	33	**0.57	43	**0.75	53	**0.51
4	**0.53	14	**0.70	24	**0.60	34	**0.70	44	**0.76	54	**0.68
5	*0.43	15	**0.71	25	**0.64	35	**0.60	45	**0.73	55	**0.63
6	**0.68	16	**0.57	26	**0.60	36	**0.77	46	**0.72	56	**0.63
7	**0.63	17	**0.61	27	**0.66	37	**0.63	47	**0.85	57	**0.65
8	**0.63	18	**0.82	28	**0.64	38	**0.77	48	**0.78	58	**0.69
9	*0.41	19	**0.61	29	**0.63	39	**0.56	49	**0.57	59	**0.59
10	**0.75	20	**0.69	30	**0.66	40	**0.73	50	**0.81	60	**0.76

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

As shown in Table (9), the correlation coefficients between the degree of each phrase of the scale and the total score of the scale ranged from (0.41: 0.85). These values were statistically significant, indicating the internal consistency of the axes.

Table 10: Correlation coefficient between the score of each dimension of the quality-of-life scale and the total score of the scale (n = 30)

Dimensions	Correlation coefficient
Quality of public health	**0.95
Quality of family and social life	**0.93
Quality of education and study	**0.91
Quality of emotions (emotional aspect)	**0.94
Quality of mental health	**0.92
Quality of time occupancy and management	**0.93

Tabular (R) value at the level of significance (0.05) = 0.361 (0.01) = 0.463

** Highly Statistically significant at $p \leq 0.01$

It is evident from Table (10) that correlation coefficients between the sum of the degrees of each dimension and the total degrees of the scale between (0.91: 0.95). They are statistically significant, which indicates the internal consistency of the scale.

The researcher verified the stability of quality-of-life scale through:

Cronbach's alpha coefficient:

To calculate the stability of the scale, the researcher used Cronbach's alpha coefficient, where the researcher applied the scale to a sample of (30) female students from the study community and other than the main sample of the study as shown in Table (11).

Table 11: Alpha coefficients for the dimensions of the quality of life scale (n = 30)

Dimensions of quality of life scale	Alpha value
Quality of public health	**0.83
Quality of family and social life	**0.88
Quality of education and study	**0.88
Quality of emotions (emotional aspect)	**0.90
Quality of mental health	**0.93
Quality of time occupancy and management	**0.87
Total score	**0.96

** Highly Statistically significant at $p \leq 0.01$

It is clear from Table (11) that, the alpha coefficients for the dimension of life quality scale ranged between (0.83: 0.96). These values were statistically significant, which indicates that the scale has an acceptable degree of stability.

Statistical Analysis:

The following Statistical treatments were used:

- The mean.
- The median.
- The standard deviation.
- Percentage.
- Correlation coefficient.
- Cronbach's alpha coefficient.
- One-way analysis of variance test).

The researcher accepted the level of significance at (0.05, 0.01), and the researcher used the SPSS program to calculate some statistical coefficients.

8 Results and Discussions

The answer to the first question, which states:

What is the level of critical thinking and quality of life for female students at the College of Education?

Data in Table (12) indicated that, the percentage of female students' degrees on the critical thinking scale was (68.23%), which indicates an average level of critical thinking among female students at the College of Education. These results are a good one, which indicates that academic programs no longer rely on indoctrination and preservation. Some College of Education programs have now tended to use some modern teaching methods and strategies such as self-learning, the use of technology to develop critical thinking skills, and the development of analytical, evaluation, conclusion and other higher thinking skills.

Table 12: The mean, variance, standard deviation, percentage, and arrangement of students' scores on the dimensions of the critical thinking scale (n = 188)

Dimensions	Mean	Variance	Standard deviation	Percentage	Rank
Recognition of assumptions	3.72	0.91	0.95	74.36	2
Interpretation	3.47	1.02	1.01	69.47	3
Evaluation of arguments	3.83	1.21	1.10	76.60	1
Deduction	3.41	1.23	1.11	68.30	4
Inference	2.62	0.64	0.80	52.45	5
Total score	17.07	9.73	3.12	68.23	

For critical thinking dimensions, the percentage of student scores ranged from (52.45:76.60 %). The dimension of the evaluation of arguments came in the first order, while the dimension of the inference came in the last place (Table 12). Similar results were obtained by [52]. These results are considered logical from the researcher's point of view, as the student initially discusses and participates in the rollout of alternatives and then tries to predict assumptions and link the cause and effect in order to interpret, devise and finally conclude to reach the appropriate results and solve problems.

Table 13: The mean, variance, standard deviation, percentage, and arrangement of students' scores on the dimensions of the quality-of-life scale (n = 188)

Dimensions	Mean	Variance	Standard deviation	Percentage	Rank
Quality of public health	34.16	18.81	4.34	68.32	5
Quality of family and social life	36.28	28.95	5.38	72.55	3
Quality of education and study	38.66	47.20	6.87	77.32	1
Quality of emotions (emotional aspect)	34.40	32.35	5.69	68.80	4
Quality of mental health	37.86	46.80	6.84	75.72	2
Quality of time occupancy and management	32.33	33.40	5.78	64.66	6
Total score	213.69	809.34	28.45	71.23	

Data in Table (13) indicated that the six quality of life levels varied between low and high among female university students. The axes of (quality of education and study), (quality of mental health) and (quality of family and social life) came in ranks with high scores, with rates of (77.32%), (75.72%) and (72.55), respectively. This reflects the extent of the student's ability to achieve her academic aspirations and her choice of the specialization she desires and the suitability of the courses for her ability and her sense of the value of the specialization she is enrolled in and her access to academic and educational support from academic professors. As well as the high level of mental health, and this reflects the student's sense of safety, high morale, and the extent of her ability to control emotions. The quality of family and social life also indicates the extent of the student's satisfaction and her sense of security and safety in her family's surroundings, and her access to psychological and emotional support from her family environment. These previous results are consistent with many studies, such as [47], [51].

As stated in the fourth, fifth, and last rank (quality of emotions, the emotional aspect), (quality of public health), (quality of time occupancy and management), the percentages for these dimensions between low and medium were as follows (68.80%), 68.32%, and 64.66%). These results can be attributed from the researcher's point of view to the fact that the student at the university level has not yet settled her emotional side, so we find that the aspect of studying, regularity in exams, and her desire to complete her studies may overshadow the emotional side and its instability. While we find that the aspect of public health still has not received full attention on the part of the student, and this consequently affects her inability to manage time and invest it in a good way, her inability to complete duties and assignments as required, and the students' lack of interest in the activities offered by the university, whether social, recreational or participation in university clubs.

Overall, the percentage of female students' scores on the quality-of-life scale was (71.23%), which indicates an average level of quality of life for university students at the College of Education.

The answer to the second question, which states:

Are there statistically significant differences in the level of critical thinking dimensions among female students due to the variable (academic level - specialization)?

First: Academic Level:

Data in Table (14) showed no significant differences between the students of the different academic levels (second, third, fourth, fifth, sixth, seventh, eighth) on all dimensions of the critical thinking scale and the total score of the scale. This indicates the closeness of the performance of the sample among female students despite the difference in the academic level, and no department is superior to the other, and this is consistent with the study [29].

Table 14: One-way analysis of variance among students of different academic levels (second, third, fourth, fifth, sixth, seventh, eighth) on the critical thinking scale (n = 188)

Dimensions	Source of Variance	Sum of squares	Degree of freedom	Mean of squares	F-value
Recognition of assumptions	Between groups	10.86.	6	1.81	2.06
	Within groups	159.20	181	0.88	
Interpretation	Between groups	12.41	6	2.07	2.10
	Within groups	178.46	181	0.99	
Evaluation of arguments	Between groups	14.17	6	2.36	2.01
	Within groups	212.38	181	1.17	
Deduction	Between groups	4.38	6	0.73	0.59
	Within groups	225.26	181	1.25	
Inference	Between groups	6.34	6	1.06	1.68
	Within groups	113.84	181	0.63	
total score	Between groups	61.51	6	10.25	1.06
	Within groups	1758.84	181	9.72	

Tabular (F) value at (0.05) = 2.16 (0.01) = 2.92

Second: Specialization:

Table 15: Significance of differences between the scores of female students in early childhood department and Islamic studies on the critical thinking scale (n = 188)

Dimensions	Early childhood		Islamic studies		t value
	Mean	Standard deviation	Mean	Standard deviation	
Recognition of assumptions	3.83	0.89	3.64	0.99	1.37
Interpretation	3.65	1.03	3.34	0.98	*2.16
Evaluation of arguments	4.22	1.00	3.53	1.08	**4.46
Deduction	3.60	1.08	3.27	1.11	*2.06
Inference	2.69	0.89	2.57	0.73	1.03
Total score	18.00	2.97	16.35	3.05	**3.72

Tabular (t) value at (0.05) = 1.96 (0.01) = 2.58

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

Table (15) indicated that there were statistically significant differences between female students specializing in Early Childhood and female students majoring in Islamic Studies in the dimensions of (interpretation, evaluation of arguments, deduction) and the total score of the critical thinking scale, and in the direction of female students majoring in Early Childhood. While there were no significant differences in the two other dimensions (predicting assumptions, conclusion). The researcher can interpret these results considering the different nature of the courses in both disciplines. We find that the Islamic studies major has a theoretical nature of the courses. As for early childhood, the nature of the courses they have is theoretical, but it has a practical application part in some courses. This is consistent with most studies such as [29], as for the absence of statistically significant differences in the two dimensions (recognition of assumptions, inference), as both disciplines share some educational courses and some academic vocabulary.

The answer to the third question, which states:

Are there statistically significant differences in the level of quality of life among female students due to the variables (academic level - specialization)?

First: Academic Level:

It is clear from Table (16) that there were no statistically significant differences between students of the different academic levels (second, third, fourth, fifth, sixth, seventh, eighth) on the dimensions of the quality-of-life scale and the total score of the scale. This result can be explained in the light of the participation of the study sample in the social environment in which they live in terms of the economic level, as the environment of the Kingdom of Saudi Arabia enjoys good economic conditions, and this is reflected in society in general and on female students. As well as education in the Kingdom of Saudi Arabia is free. Where students of all levels of achievement and academic receive a monthly material reward, and this necessarily reflects on the student's feeling of the quality of life in general, and affects the social, family, health and psychological status of the student, and thus the quality of life in general, and this was confirmed by some studies such as [34]. Likewise, education at the university is not limited to scientific material only, but also deals with cultural, health, educational, social and psychological aspects that would improve the student's university life in particular, and this was confirmed by [32].

Likewise, Jouf University in the Kingdom of Saudi Arabia provides many services to female students in various fields, which would raise the quality of life, in terms of health, such as preventive, diagnostic and awareness campaigns for female students, and they are advertised in an excellent way. And always strive to educate female students and pay attention to their health. This result is consistent with some studies such as [47], [51], [52].

Table 16: One-way analysis of variance among female students of different academic levels (second, third, fourth, fifth, sixth, seventh, eighth) on the quality of life scale (n = 188)

Dimensions	Source of Variance	Sum of squares	Degree of freedom	Mean of squares	F-value
Quality of public health	Between groups	111.50	6	18.58	0.99
	Within groups	3405.71	181	18.82	
Quality of family and social life	Between groups	234.23	6	39.04	1.36
	Within groups	5179.39	181	28.62	
Quality of education and study	Between groups	286.90	6	47.82	1.01
	Within groups	8539.31	181	47.18	
Quality of emotions (emotional aspect)	Between groups	200.29	6	33.38	1.03
	Within groups	5848.79	181	32.31	
Quality of mental health	Between groups	262.63	6	43.77	0.93
	Within groups	8489.78	181	46.91	
Quality of time occupancy and management	Between groups	403.24	6	67.21	2.08
	Within groups	5842.31	181	32.28	
Total score	Between groups	4354.06	6	725.68	0.89
	Within groups	146992.42	181	812.11	

Tabular (F) value at (0.05) = 2.16 (0.01) = 2.92

Second: Specialization:

Table 17: Significance of differences between the scores of female students in early childhood department and Islamic studies on the quality-of-life scale (n = 188)

Dimensions	Early childhood		Islamic studies		t value
	Mean	Standard deviation	Mean	Standard deviation	
Quality of public health	34.48	4.63	33.92	4.11	0.89
Quality of family and social life	37.19	5.63	35.59	5.10	1.93
Quality of education and study	39.62	6.75	37.93	6.91	1.67
Quality of emotions (emotional aspect)	34.57	6.22	34.27	5.27	0.35
Quality of mental health	38.40	7.67	37.46	6.14	0.93
Quality of time occupancy and management	33.15	6.05	31.71	5.52	1.70
Total score	217.40	31.86	210.88	25.37	1.56

Tabular value (t) at (0.05) = 1.96 (0.01) = 2.58

The results presented in Table (17) indicated that there were no statistically significant differences between female students specializing in early childhood and female students majoring in Islamic studies in all dimensions of the quality-of-life scale and the total score of the scale. This result can be explained as all the female students in this study are from the humanities majors affiliated to the College of Education. Therefore, all female students may have similar levels of achievement or have similar professional and academic inclinations, and these students are offered the same university activities, and this similarity can affect their quality of life. Likewise, the level of material and social services provided to individuals in both majors is similar. These results are in line with [12], [46].

The answer to the fourth question, which states:

Is there a correlation between each of the dimensions of critical thinking and quality of life for female students at the College of Education?

As shown in Table (18), there was a statistically significant positive relationship between the dimensions (recognition of assumptions, evaluation of arguments) of critical thinking scale and each dimensions of quality of life scale (quality of public health, quality of family and social life, quality of education and study, quality of emotions (the emotional aspect), quality of health Mental), while there was no significant relationship with the dimension (quality of time occupancy and management

In addition, there was a statistically significant positive relationship between the dimension (interpretation) of the critical thinking scale and all dimensions of the quality-of-life scale.

Table 18: Correlation coefficients between dimensions of critical thinking and quality of life among female students at the College of Education (n = 188)

Quality of life / Critical thinking	Quality of public health	Quality of family and social life	Quality of education and study	Quality of emotions (emotional aspect)	Quality of mental health	Quality of time occupancy and management	Total score
Recognition of assumptions	0.24**	0.16*	0.20**	0.18*	0.20**	0.10	0.22**
Interpretation	0.29**	0.20**	0.31**	0.34**	0.19**	0.20**	0.31**
Evaluation of arguments	0.20**	0.31**	0.37**	0.17*	0.28**	0.07	0.29**
Deduction	0.19**	0.23**	0.09	0.20**	0.12	0.04	0.17*
Inference	0.27**	0.16*	0.14*	0.19**	0.06	0.18*	0.19**
Total score	0.38**	0.35**	0.36**	0.34**	0.28**	0.18*	0.38**

Tabular (R) value at (0.05) = 0.14 (0.01) = 0.19

* Statistically significant at $p \leq 0.05$. ** Highly Statistically significant at $p \leq 0.01$

Moreover, there was a statistically significant positive relationship between the dimension (Deduction) of the critical thinking scale and the dimensions (general quality of life, quality of family and social life, quality of emotions (emotional aspect), quality of mental health) of the quality-of-life scale. While there was no significant relationship with (the quality of education and study, the quality of time occupation and its management).

Also, data presented in Table (18) showed a statistically significant positive relationship between the dimension (Inference) of critical thinking scale and all dimensions of quality of life except (quality of mental health).

Overall, there was a statistically significant positive relationship between the dimensions of the critical thinking scale and all dimensions of the quality of life scale and its total score. The results are consistent with similar findings reported by [3], [40], [45].

Finally, the researcher believes that a positive relationship between critical thinking and quality of life, especially in the university education stage where the student's quality of life is closely related to the quality of his thinking and the student's sense of satisfaction, reflects positively on his academic and practical life. Critical thinking skills such as interpretation, deduction, deduction, and other skills are important in the student's life in order to make it easier for him to understand and comprehend aspects of life and to adapt positively to society, no matter how intertwined his problems are. If the student can decide his way of thinking, this leads to achieving the best for himself, accomplishing his work, and living a happy and balanced life, and in order to achieve the quality of life, we must develop critical thinking skills. Where the student has an enlightened mentality, so his practice of these skills becomes his habit, which makes him a creative learner and a good practitioner of life, who is able to look at his daily problems in a new way that is appropriate

to the developments of the times.

In conclusion, the result of that hypothesis was positive, as imposed by the researcher, and this indicates the importance of critical thinking with its skills and dimensions in improving the life of our student at the university level, which is an important stage from which the student moves from theoretical life at the university to practical life after that. Which makes her possession of critical thinking skills an urgent and necessary matter, and this is commensurate with the requirements of the Kingdom of Saudi Arabia's Vision 2030, which came with the launch of the year (2018) to improve life and introduce new and practical systems that are commensurate with the requirements of the times.

9 Recommendations

- Determining a measure of critical thinking and quality of life according to the skills provided by the university and in line with the Kingdom of Saudi Arabia's Vision 2030.
- Integration of critical thinking skills and quality of life in the courses of the Colleges of Education.
- Attempting to encourage female students to participate in university activities, which motivate them to invest their leisure time well.
- Design curricula for teaching the quality of life and ways of acquiring and learning it.
- Enhancing the role of academic advising in universities to assist students in developing their ways of thinking and guiding them in the ways that enable them to effectively achieve a high level of quality of life.
- Building a clear perception of the student to develop his ways of thinking, which in turn achieve quality of life in its various fields, to bear fruit in the student's university life.
- Conducting light scientific and psychological studies that shed light on the dimensions of critical thinking and the quality of life for university students.

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Conflict of interest

The authors declare that there is no conflict regarding the publication of this paper.

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